

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
2 December 2004 (02.12.2004)

PCT

(10) International Publication Number
WO 2004/103086 A2

(51) International Patent Classification⁷:

A23J

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(21) International Application Number:

PCT/US2004/014735

(22) International Filing Date: 12 May 2004 (12.05.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/469,712 12 May 2003 (12.05.2003) US

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant (for all designated States except US): ALLTECH, INC. [US/US]; 3101 Catnip Hill Pike, Nicholasville, KY 40356 (US).

Published:

— without international search report and to be republished upon receipt of that report

(72) Inventor; and

(75) Inventor/Applicant (for US only): POWER, Ronan, F. [IE/US]; 752 Andover Village Drive, Lexington, KY 40509 (US).

(74) Agents: SCHICKLI, Warren, D. et al.; King and Schickli, PLLC, 247 North Broadway, Lexington, KY 40507 (US).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2004/103086 A2

(54) Title: METHODS FOR IMPROVING THE NUTRITIONAL QUALITY OF RESIDUES OF THE FUEL, BEVERAGE ALCOHOL, FOOD AND FEED INDUSTRIES

(57) Abstract: A method is provided for improving the nutritional quality of a fibrous by-product or residue of a food manufacturing process, wherein the fibrous by-product or residue is inoculated with at least one filamentous fungus, and the fibrous by-product or residue is fermented thereby to decrease dry matter content, increase protein content, and decrease fat content of the by-product or residue. Suitable byproducts or residues include spent brewer's grains, dried distiller's grains, dried distiller's solubles, distiller's dried grains with solubles, residues of the cereal processing industry, wheat bran, soybean hulls, citrus pulp, beet pulp, rice husks or hulls, bagasse, apple pomace, and combinations thereof. Enzymes produced during the fermentation may also be used as valuable coproducts such as animal feed supplements, or may be used in primary fermentations for the brewing and distilling industry.